

NOTES ON RANZANIA MAKUA JENKINS AND OTHER
SPECIES OF FISHES OF RARE OCCURRENCE ON THE
CALIFORNIA COAST.

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This paper contains some observations that have been made from time to time on certain fishes which are rarely seen on the California coast. The first part is a record of the appearance in this region of *Ranzania makua* Jenkins, while the second part deals with species living in Monterey Bay.

The type of *Ranzania makua* and specimens of the other species are in the National Museum.

PART 1.

RANZANIA MAKUA Jenkins.

Plate 63.

The appearance in the eastern Pacific of an example of *Ranzania makua* is of considerable interest, since the species has been recorded only from Hawaii and Japan. The Hawaiian record is based on two specimens, the type¹ and a smaller example,² and also on a painting by a local artist.³ The Japanese record rests entirely on an old painting in the collection of Count Date.⁴

The California specimen was found dead on the beach at Oceano, San Luis Obispo County, in August, 1909, by Mr. John P. Latronel. It was rather well preserved, although it had been washed about in the breakers until the silver color was almost completely removed from the body. It measures 460 millimeters in length. The upper surface of the body is dark, the edges of the hexagonal scales being very light in comparison. The sides show traces of silver here and there, but not even a suggestion of dark bands or reticulations appears. When compared directly with the type of the species

¹ Oliver P. Jenkins, Description of a new species of *Ranzania* from the Hawaiian Islands, Proc. Cal. Acad. Sci., ser. 2, vol. 5, 1895, pp. 780 to 784, colored plate.

² Jordan and Evermann, Fishes Hawaiian Islands, Bull. U. S. Fish Commission, No. 23, pt. 1, p. 440.

³ Jenkins, Proc. Cal. Acad. Sci., ser. 2, vol. 5, 1895, p. 783.

⁴ Jordan and Snyder, A review of the Gymnodont fishes of Japan; Proc. U. S. Nat. Mus., vol. 24, p. 262.

the California example is seen to be somewhat more slender, the caudal peduncle is narrower, the head and snout are shorter, the eye smaller, the fins shorter, and the color different, lacking entirely the peculiar curved bands so conspicuous on the body of the type specimen.

The measurable differences are shown in the appended table.

	California specimen.	Hawaiian specimens.	
Length of body in millimeters.....	430	470	101
Length head, in hundredths of length.....	.34	.37	.35
Depth body.....	.475	.515	.32
Depth caudal peduncle.....	.305	.39	.15
Length snout.....	.127	.14	.13
Diameter eye.....	.059	.067	.065
Interorbital width.....	.09	.08	.09
Distance between eye and top of head.....	.046	.04	.045
Between gill-opening and back.....	.13	.123	.115
Between gill-opening and ventral surface.....	.27	.32	.18
Between gill-opening and eye.....	.16	.165	.15
Height dorsal.....	.31	.35	.215
Height anal.....	.28	.29	.20
Length pectoral.....	.21	.245	.15
Length caudal.....	.065	.075	.08
Dorsal rays.....	17	17	17
Anal rays.....	18	18	18
Pectoral rays.....	13	13	13
Fully developed caudal rays.....	18	18	18

The second Hawaiian example was obtained in the Honolulu market by Doctor Jordan, and is now in the collection of the Bureau of Fisheries. (Pl. 63, fig. 2.) It is a young individual, measuring about 108 millimeters in length, and consequently of especial value, as it aids in illustrating some of the structural changes that occur with advancing age. It is much more elongate than the older specimens, the narrowness of the body being most evident in the caudal region. The base of the caudal fin is a straight oblique line; not convex as in older examples. The caudal rays are not fan-shaped,¹ but are branched in the ordinary way, the division appearing farther from the base than is usual among fishes. The length of the caudal fin is relatively greater, while that of the other fins is less. The body is everywhere silvery, very dark on the back. On the body behind the pectoral are about 15 more or less distinct dark spots, which are nearly equal in size to the eye. There are no bands on the head.

The Japanese figure² is a splendid painting, and although it omits certain slight details of structure, there can be no doubt as to the species which it represents. It delineates a form similar to that of the others, but of a different color. The plates are broadly outlined in white, except in certain restricted areas where they are narrowly bordered by brown, the centers being everywhere dark.

¹ Jenkins, Proc. Cal. Acad. Sci., ser. 2, vol. 5, 1895, p. 780, fig. 3.

² Through the courtesy of Count Date, who presented Doctor Jordan with a copy of the painting, a photograph is here reproduced. (Pl. 63, fig. 1.)

Silvery pigment covers the dorsal surface, and appears irregularly on the sides, cheeks, and on the caudal region between the vertical fins. There is a mass of brown color on the body below the pectoral, on the snout, and also in the region between eye and gill opening. The latter region is bordered above by a broad pink stripe with dusky borders, and there is a spot of the same color on the snout. The vertical fins are blackish; the rays of pectoral and caudal white. Unmistakable traces of curved vertical bands similar to those of the type appear on the head.

In the opinion of the writer the differences exhibited by the specimens before him and by the Japanese drawing are of such a nature that they may be attributed largely to individual variation and age, and they should not, at the present time at least, be regarded as characters distinguishing different species. Some of the apparent differences in color are clearly due to accident, as in the California example, where the thin epidermis has been almost entirely scrubbed off by the sand and the breakers, a gentle touch with a blunt instrument being sufficient to remove the silvery pigment or the dark color from the plates. It is not probable that the Japanese painting was made from a living individual; the Hawaiian specimen had been kept on ice for a long time before it was described, and consequently we only know stages of the fading color unless it is not so evanescent after death as in most other fishes.

This species is closely related to *Ranzania truncata* of the Atlantic, and a careful survey of the data at hand compels one to hesitate in distinguishing between them. For when the variation in color and form exhibited by the Pacific specimens is considered along with the information to be derived from the rather brief descriptions¹ and poor figures of Atlantic examples, one must admit that there is little or no ground for the recognition of two species except the presumption that they inhabit different and widely separated geographic regions.² *Mola mola*, another species of the same family, which inhabits both the Atlantic and Pacific Oceans, has been described under 30 or more specific names and placed in upward of a dozen nominal genera.

¹ Albert Gunther; Catalogue Fishes British Museum, vol. 8, p. 319. Francis Day; Fishes Great Britain and Ireland, p. 276, pl. 149. Jonathan Couch; Annals Natural History, vol. 6, p. 144; and other accounts referred to in the above volumes.

² Too late for incorporation in the above, the writer has seen a paper by Dr. Jacques Pellegrin on a specimen of *Ranzania truncata* from Martinique (Pellegrin, Doctor Jacques; Sur le Presence d'un Banc de *Ranzania truncata* Retzius a la Martinique; Bulletin de la Société Zoologique de France, tome 37, 1912, p. 228). An examination of the description and the figure there given leaves no doubt as to the identity of *R. truncata* and *R. makua*. In this connection Doctor Pellegrin says: "La coloration de ces individus se rapproche tout à fait de celle donnée par Jenkins, pour une espèce des Iles Hawaï, qu'il décrit comme nouvelle sous le nom de *Ranzania makua*. En l'absence du type et ne pouvant contrôler les autres caractères, il est difficile de se prononcer d'une façon catégorique, mais cette ressemblance de coloration incite à penser que l'espèce des Iles Hawaï n'est probablement pas distincte de celle de la Martinique."

PART 2.

SPECIES FROM MONTEREY BAY.

It is largely through the kindly interest of Dr. Harold Heath, Messrs. Walter Weymouth, and William F. Allen that the writer has been enabled to obtain specimens of the species here noted. Most of them were taken while dredging in the shallow water near shore in Monterey Bay.

Family BRANCHIOSTOMIDÆ.

BRANCHIOSTOMA CALIFORNIENSE Gill.

Three specimens of this species were dredged from the sandy bottom opposite Monterey at a depth of about 5 fathoms. They measure 65 to 76 millimeters. The myocommata number as follows:

45-16-10:71

44-17- 9:70

44-16- 9:69

Family ICOSTEIDÆ.

ICOSTEUS ÆNIGMATICUS Lockington.

A young example of this form was found on the beach near Pacific Grove. It measures about 80 millimeters. Spicules are present along the lateral line and on the rays of the dorsal, anal, and caudal fins. The color differs from that of the adult, there being 7 dark vertical bands on the body. These are confined to the region extending between the interneurals and interhæmals, which are plainly visible in the translucent body. Before the anterior band and just behind the occiput is a round spot. The posterior band is at the base of the caudal fin. The bands are somewhat narrower than the light interspaces. The third band, counting from the caudal, unites above and below with large, dark spots. Similar spots are above and below the fifth band from the caudal, and there is an elongate spot at the base of the anterior third of the dorsal fin. The bands and spots on the opposite (left) side of the body differ somewhat in their relations to each other. The caudal and anal are broadly edged with blackish; the pectoral narrowly bordered with black; ventrals black. When fresh, the head and body were translucent, with a light straw tint. There are 53 rays in the dorsal fin, 38 in the anal.

Family COTTIDÆ.

ICELINUS QUADRISERIATUS (Lockington).

A specimen having the ventrals deep black was taken at a depth of 10 or 12 fathoms near Pacific Grove.

Family AGONIDÆ.

ODONTOPIXIS TRISPINOSUS Lockington.

Eight examples from a depth of 5 to 10 fathoms near Pacific Grove.

STELLERINA XYOSTERNA (Jordan and Gilbert).

One specimen from about 10 fathoms near Monterey.

AVERRUNCUS EMMELANE Jordan and Starks.

Three individuals measuring 53 to 65 millimeters, from 10 to 15 fathoms near Pacific Grove.

Family PLEURONECTIDÆ.

PLEURONICHTHYS DECURRENS Jordan and Gilbert.

The young of this species (measuring 35 to 60 millimeters), of which a considerable number were secured at depths of 10 or 15 fathoms, exhibit a brilliant type of coloration not seen in the adult. The body is variously spotted and clouded with black and brownish black, reticulations and ocelli also appearing without any particular order. A black spot or ocellus is usually present on the lateral line near middle of body. The dorsal has about 12, the anal usually 11 vertical black bars or elongate spots, most of which involve two or three rays and extend from base to near tip of fins; some broken in the middle or only represented by a comparatively small distal spot. Both dorsal and anal are bordered with white. The caudal is dusky, with white edges and a white bar across the base. The dusky central portion is often broken by white lines parallel with the rays. The blind side is often finely speckled.

Family GOBIIDÆ.

RHINOGOBIUS NICHOLSI (Bean).

Examples from depths of 10 or 15 fathoms near Pacific Grove were pale blue gray in life, tinted with light yellow on the head; chin and throat yellow; sides with five indistinctly defined, dusky vertical bars; scales with narrow orange borders; dorsals and caudal yellow, the rays and spines dotted with bright orange; spinous dorsal broadly edged with deep black; anal suffused with yellow; pectorals light; ventrals black. Some specimens were less brightly colored, the ventrals being almost immaculate.

Family BATHYMASTERIDÆ.

RATHBUNELLA ALLENI Gilbert.

An example measuring 125 millimeters was taken in a pool near the water's edge at very low tide. The dorsal fin has an elongate, black-

ish spot on the upper anterior edge. The head is contained 4.5 times in the length to base of caudal. Dorsal 44; anal 33; pectoral 17.

Family BLENNIIDÆ.

NEOCLINUS BLANCHARDI Girard.

The young of this species, measuring about 44 millimeters, have 12 or 13 conspicuous crossbands on the body and a row of 11 spots just below the base of dorsal fin, some of the spots coinciding in position with the bands. The anterior ocular cirrus is but little longer than the posterior ones. The maxillary reaches beyond the eye but is not quite equal in length to half the head. Found in the pools near Pacific Grove.

NEOCLINUS SATIRICUS Girard.

A specimen 100 millimeters in length, from a pool near Pacific Grove, has the maxillary very short, not quite reaching the edge of the preopercle. The filaments of the head are short. An ocellus is present between the sixth and ninth spines.

Family OPHIDIIDÆ.

CHILARA TAYLORI Girard.

In young individuals the body, excepting the abdomen, is covered with minute brown specks, the spots characteristic of larger examples being absent. Taken at depths of 10 or 12 fathoms near Pacific Grove.